31 May 1955

50X1

MEMORANDUM FOR: THE RECORD

SUBJECT : Project Monitor [redacted] 50X1
RD-29 s.a.,
R.O. #5 P-60B Night Landing System, UV
R.O. #6,7 P-102,103 Transducer & Actuator Index
R.O. #8 P-109 Contact Microphone
R.O. #10 P-93 Comms System, VLF, Ground
R.O. #11 P-155 Subminiature Recorder

1. Time and Place of Meeting: 26 and 27 May 1955 at [redacted] 50X1
[redacted] 50X1

2. Attendance: [redacted] 50X1

All projects
P-155
P-109, P-93
P-109, P-93
P-102, P-103
P-60B
P-60B

3. Purpose of the Meeting: The meeting was held to discuss progress and future actions on the above projects.

4. Discussion:

a. P-60B Night Landing System, UV

The results of the shake table tests of the autocollimators were satisfactory. Out of the 112 units there was but one failure, that of the unit which caused the question of target loosening to come up.

On the night of the 26th field tests were run on all the units. Some of these tests were witnessed by APD personnel. The units were rated excellent, good, fair or poor on the basis of their brillance in comparison to two standard units at a range of 2400 feet. Of the 112 units, 22 rated fair or worse. Of these 22, 11 were too weak to be seen. The reasons for the failures were not determined at the time.

[redacted] is presently planning to fix the units on their own funds and time. In the opinion of the undersigned no further money should be allotted by APD to this project. The project is 50X1

of very low priority and has already cost more than it is worth to have 112 autocollimators. Preferably, the units should be shipped as is, marked with their condition. Even to have [redacted] spend their own money on the units seems to be a considerable waste. 50X1

b. P-102, P-103 Transducer and Actuator Index

The cards for the index are nearly completed. Of the total of 4500 cards approximately 700 remain uncoded.

The shake table units have been finished as have the parts for the drawers. It is expected that the work will be completed on schedule.

The size and weights of the various packages are listed below for shipping purposes. A suitable address has been requested of [redacted] 50X1

No. of Packages	Size	Weight	Content
4	3'x1½'x1'	200 lbs.	Shake tables
4	3'x2'x1½'	150 lbs.	Cabinets
1	2'x2'x2'	150 lbs	Extra blank cards

c. P-109 Contact Microphone

[redacted] has not as yet been able to put major effort on this project since the personnel involved have been busy with P-93. 50X1
[redacted] has, however, obtained the 12 crystals for the sample units which are to be built and has built the first of the 12 mounts for the crystals. The units will be delivered within one to two months. 50X1

The undersigned discussed with [redacted] the feelings of ASD in regard to this project. It is felt that immediate attention should be paid to the problem of determining the optimum frequency response based on a study of the wall noise and transmission characteristics and the human ear. Emphasis should be placed on heavy masonry walls such as are found in apartment houses, hotels, etc. A similar study should be made on exposed plumbing. It was stated by the undersigned that this study of walls should take place before any further attempts to increase transducer sensitivity are made. 50X1

The idea of using a binaural technique with two transducers was not discussed, but has some merit in view of probable noise difficulties and should be brought up at a future meeting.

d. P-93 Comms System, VLF, Ground

[redacted] demonstrated a breadboard receiver and transmitter. 50X1

The receiver was about 2" x 6" x 4" less batteries. The transmitter was about 4" x 8" x 10" less the complete power supply. The test range was 1 mile.

Noise conditions were quite favorable. The field strength meter indicated an average noise level of 3 microvolts not counting static crashes up to 10 to 15 microvolts in amplitude. The signal, with 17 watts being put in the ground, ran about 10 microvolts. (Probe current was about 0.5 ampere - probe spacing 100 meters)

During the test the transmitter performed quite well, keying up to 15 words per minute with no evidence of chirps. The present transmitter circuit is a conventional oscillator, buffer, driver, power amplifier setup where only the last stage is a vacuum tube, 6L6. Frequency stability at 31 kc was good.

The receiver as demonstrated was not operating properly. The Q-multiplier front end was not properly adjusted. A great deal of broadcast radio interference was noted which made the signal completely unreadable. Experiment showed that a capacitor shunting the input terminals of the receiver greatly improved the performance. Further improvement could be had by making the Q - multiplier operative.

During the course of the work of the past 2 months [redacted] has made it apparent that they do not have the electronic design know-how to be found at Motorola or Hazeltine. In addition [redacted] is barren of electronic suppliers, a disadvantage which has repeatedly made itself felt on P-93. Consequently, the undersigned pointed out that although [redacted] has done a creditable job to date on P-93 it would be better if, following the completion of a breadboard system, the project were turned over to a outfit specializing in electronics design and production work. APD would, of course, re-estimate the possibilities inherent in this type of communication before continuing the work. 50X1 50X1 50X1

e. P-155 Subminiature Recorder

Work is proceeding satisfactorily on the final report and the proposal. Both will be completed within 10 days.

[redacted] 50X1

TMS/APD

Distribution:

[redacted] - 1 50X1
- 1
P-608 - 1, P-102 - 1, P-103,
P-109 - 1, P-93 - 1, P-155 - 1.
Chrono. - 1

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